

## CLAIMS

What is claimed is:

1        1. An add-on circuit card retention apparatus comprising:  
2              an add-on circuit card having a face generally defining a reference plane, said  
3              add-on circuit card having a first connector;

4              a second circuit card having a second connector for mating with said first  
5              connector to provide electrical contact between said add-on circuit card and said second  
6              circuit card;

7              a clip assembly for releasably securing said add-on circuit card to said second  
8              circuit card, said clip assembly comprising:

9              a first catch member located on said add-on circuit card and extending  
10          towards said second connector, said first catch member having a first catch  
11          surface, said first catch surface generally lying in a plane forming a first catch  
12          member angle with respect to said reference plane of less than 90 degrees; and

13          a second catch member being located on said second connector and  
14          extending along said second connector, said second catch member having a  
15          second catch surface extending away from said second connector, said second  
16          catch surface generally lying in a plane forming a second catch member angle  
17          with respect to said reference plane of less than 90 degrees when said first  
18          connector of said add-on circuit card is in a mated condition with said second  
19          connector.

1        2.. An add-on circuit card retention apparatus according to claim 1, wherein said clip  
2        assembly further includes a first member extending from said add-on circuit card and a second  
3        member extending from said first member to a position near said second connector when said  
4        first connector of said add-on circuit card is mated with said second connector of said second  
5        circuit card, said first catch member being mounted on said second member.

1           3.. An add-on circuit card retention apparatus according to claim 1, wherein said first  
2 catch member angle measures between 89 degrees and 70 degrees.

1           4. An add-on circuit card retention apparatus according to claim 1, wherein said second  
2 catch member angle measures between 89 degrees and 70 degrees.

1           5. An add-on circuit card retention apparatus according to claim 1, wherein said  
2 first catch member angle is substantially equal to said second catch member angle.

1           6. An add-on circuit card retention apparatus according to claim 1, wherein said second  
2 connector has a side, and said second catch member is located on said side of said second  
3 connector.

1           7. An add-on circuit card retention apparatus according to claim 1, wherein said clip  
2 assembly is substantially rigid.

1           8. An add-on circuit card retention apparatus according to claim 1, wherein said  
2 second circuit card is a personal computer motherboard.

1           9. An add-on circuit card retention apparatus according to claim 1, wherein said  
2 first connector is a printed circuit card edge connector and said second connector  
3 conforms to the Personal Computer Interconnect (PCI) standard.

1           10. An add-on circuit card retention apparatus according to claim 1, wherein said  
2 first connector is a printed circuit card edge connector and said second connector  
3 conforms to the Industry Standard Adapter (ISA) standard.

1           11. An add-on circuit card retention apparatus according to claim 1, wherein said  
2 first connector is a printed circuit card edge connector and said second connector  
3 conforms to the next generation interconnect standard known as 3GIO.

1           12. A method for securing an add-on circuit card with a first connector in a mated  
2 relationship with a second connector, said add-on circuit card having a clip assembly,  
3 said clip assembly including a first catch member with a first catch surface thereon  
4 mounted on said add-on circuit card and a second catch member with a second catch  
5 surface formed thereon on said second connector, said first catch surface being oriented  
6 at an acute angle with respect to a face of said add-on circuit card and said second catch  
7 surface being oriented at an acute angle with respect to said face of said add-on circuit  
8 card when said connectors are in a mated condition, comprising:

9           inserting said first connector of said add-on circuit card into said second  
10 connector;

11           seating said first connector of said add-on circuit card fully into said second  
12 connector;

13           exerting pressure on said clip assembly such that said first catch member of said  
14 clip assembly extends just past said second catch member of said second connector;

15           maneuvering said first catch surface of said first catch member so that said first  
16 catch surface aligns with said second catch surface of said second catch member of said  
17 second connector; and

18           releasing pressure on said clip assembly such that said first catch surface of said  
19 first catch member on said first connector contacts said second catch surface of said  
20 second catch member on said second connector to thereby retain said first connector in  
21 said second connector.

1        13. A method according to claim 12, wherein said second connector is mounted  
2    on a second circuit board, and said second circuit board comprises a personal computer  
3    motherboard.

1        14. A method according to claim 12, wherein said first connector is a printed  
2    circuit card edge connector and said second connector conforms to the Personal  
3    Computer Interconnect (PCI) standard.

1        15. A method according to claim 12, wherein said first connector is a printed  
2    circuit card edge connector and said second connector conforms to the Industry Standard  
3    Adapter (ISA) standard.

1        16. A method according to claim 12, wherein said first connector is a printed  
2    circuit card edge connector and said second connector conforms to the next generation  
3    interconnect standard known as 3GIO.

1        17. A method according to claim 12, whereas said clip assembly is fastened to  
2    said add-on circuit card by an adhesive.

1        18. A method according to claim 12, whereas said clip assembly is fastened to  
2    said add-on circuit card by welding.

1        19. A method according to claim 12, whereas said clip assembly is fastened to  
2    said add-on circuit card by a fastener.

1        20. A method according to claim 12, wherein said first catch surface has  
2    substantially the same angle as said second catch surface.